

REMARKS

The Examiner is thanked for carefully reviewing the present application. The present amendment is in response to the Office Action mailed on June 30, 2005 regarding claims 1-19. The applicants have thoroughly reviewed the outstanding Office Action including the Examiner's remarks and the references cited therein. The following remarks are believed to be fully responsive to the Office Action and render all claims at issue patentably distinguishable over the cited references.

Favorable reconsideration is requested in view of the above amendments and the following remarks.

Claims 1, 4, 5, 11, 16 and 17 are amended, claims 3, 13-15, 18 and 19 are cancelled, and thereof claims 1, 2, 4-12, 16 and 17 are now pending in the application. These amendments contain no new matter nor raise new issues.

As requested, a new Declaration and Power of Attorney setting forth the full name of each of the inventors is being submitted herewith.

Additionally, it was discovered that the PTO-1449 form attached to the June 30, 2005 Office Action and initialed by the Examiner incorrectly listed the prior art reference as NP-1566-TW. Accordingly, also submitted is a "corrected" Form PTO-1449 indicating the correct prior art reference as Taiwanese Patent No. 494206. It is respectfully requested that the Examiner initial and return this corrected form to the undersigned.

Claim Rejections under 35 U.S.C. §103

1. Claims 1, 7-8, 13-14 and 16-17 are rejected under 35 U.S.C.103(a) as being unpatentable over Stahl et al. (U.S. Patent No. 6,305,406 B1) (hereinafter referred to as "Stahl et al."). These rejections are respectfully traversed. As will be fully explained below, it is respectfully submitted that Stahl et al. does not render the claimed invention obvious, and the applicants respectfully request that the section 103(a) rejection be withdrawn.

(1) With regard to claim 1, the applicants disclose an apparatus for monitoring and preventing leakage of process cooling water in a furnace, wherein a bellows used to deliver the process cooling water and covered with a protecting tubing, and comprises: a tray under the bellows, wherein the tray comprises: an anti-leak dish, wherein the anti-leak dish can receive the process cooling water in leaking and drained out from two ends of the protecting tubing; and a shelter plate obliquely connecting to a side of the anti-leak dish, wherein the shelter plate can block the process cooling water sprinkling toward the wafers.

In the present application, the tray comprises the anti-leak dish and the shelter plate, and the tray is installed under the bellows covered by a protecting tubing to receive the process cooling water leaking from the bellows and to prevent the process cooling water drained out from two ends of the protecting tubing from falling on the underlying wafers, so as to increase the process reliability and the product yield.

Stahl et al. provide a number of spray hoods, and employ the spray hoods to cover various portions of the cooling system. According to the description of the Examiner, it is obvious that the Examiner takes the spray hood as the shelter plate. In Stahl et al., the pipe is not covered with a protecting tubing, and the fluid is sprayed out from the pipe, so that the spray hoods have to be employed to cover the various portions of the cooling system. However, in the present application, the bellows is covered by the protecting tubing, so the protecting tubing can guide the flow direction of the leaking process cooling water to make the leaking process cooling water be drained out from two ends of the protecting tubing. Accordingly, the process cooling water is drained out and not sprayed out from the bellows, so that the tray comprising an anti-leak dish and a shelter plate obliquely connecting to a side of the anti-leak dish is employed and installed under the bellows in the present application. Moreover, the spray hood and the drip pan in Stahl et al. are two separated components. However, in the present application, the shelter plate is connected with the anti-leak dish. Obviously, the spray hood in Stahl et al. is different from the shelter plate of the present application, so that Stahl et al. fail to disclose the apparatus of amended claim 1 of the present application. Therefore, Stahl et al. fail to disclose the technique features of amended claim 1 of the present application.

Since Stahl et al. do not disclose the technique features of amended claim 1 of the present application, it is obvious that the technology features of the present application are non-obvious, and amended claim 1 is allowable.

Since independent claim 1 is allowable and claim 3 is cancelled, dependent claims 2 and 4-10 each of which depends from independent claim 1 are likewise believed to be allowable. Accordingly, the applicants respectfully request that the section 103(a) rejections be withdrawn.

(2) Applicants have cancelled claims 13-14 of the present application.

2. Claims 2-3, 5-6, 9-12, 15 and 18-19 are rejected under 35 U.S.C.103(a) as being unpatentable over Stahl et al. (U.S. Patent No. 6,305,406 B1) (hereinafter referred to as “Stahl et al.”) in view of applicants admitted prior art NP-1566-TW (hereinafter referred to as “AAPA”). These rejections are respectfully traversed. As will be fully explained below, it is respectfully submitted that the combination of Stahl et al. and the AAPA does not render the claimed invention obvious, and the applicants respectfully request that the section 103(a) rejection be withdrawn.

(1) With regard to claims 2-3, 5-6 and 9-10, just as the aforementioned description, since independent claim 1 is allowable, and claim 3 is cancelled, dependent claims 2, 5-6 and 9-10 each of which depends from independent claim 1 are likewise believed to be allowable. Accordingly, the applicants respectfully request that the section 103(a) rejections be withdrawn.

(2) With regard to claim 11, the applicants disclose an apparatus for monitoring and preventing leakage of process cooling water in a furnace comprises: a bellows used to deliver the process cooling water and covered with a protecting tubing; a tray under the bellows, wherein the tray comprises: an anti-leak dish, wherein the anti-leak dish can receive the process cooling water in leaking and drained out from two ends of the protecting tubing; and a shelter plate obliquely connecting to a side of the anti-leak dish, wherein the shelter plate can block the process cooling water sprinkling toward the wafers; a sensor located on the anti-leak dish, wherein the sensor comprises two conductive lines which are fixed on a bottom of the anti-leak dish and are not electrically connected normally, and the conductive lines are electrically connected and send a signal while the process cooling water leaking on the anti-leak dish and

contacting the conductive lines; and a detector electrically connecting to the sensor, wherein the detector can receive the signal sent by the sensor and send a warning signal. It is worth noting that amended claim 11 substantially includes the contents of amended claim 1 and claims 8-10.

In the present application, the tray comprises the anti-leak dish and the shelter plate, and the tray is installed under the bellows covered by a protecting tubing to receive the process cooling water leaking from the bellows and to prevent the process cooling water drained out from two ends of the protecting tubing from falling on the underlying wafers, so as to increase the process reliability and the product yield. Besides, the sensor comprises two conductive lines fixed on the anti-leak dish, wherein the conductive lines are not electrically connected normally, when the process cooling water leaking on the anti-leak dish and contacting the conductive lines, the conductive lines are electrically connected and send a signal to the detector, and then the detector send a warning signal. Therefore, with the application of the present apparatus, the process cooling water can be prevented from influencing the quality of wafers, so as to effectively lower the impact from the leakage of the process cooling water.

Just as the aforementioned description, the spray hood in Stahl et al. is different from the shelter plate of the present application, so that Stahl et al. fail to disclose the apparatus of amended claim 1 of the present application. According to the specification of the AAPA, the AAPA does not disclose or teach the technique of using a tray to block the process cooling water sprinkling toward the wafer and to receive the process cooling water falling thereon. Besides, Stahl et al. also fail to disclose a sensor that comprises two conductive lines, which are not connected normally, and form an electrical connection when they are contacted by water. Furthermore, the AAPA disclose a detecting device comprising two conductive lines which are not electrically connected mutually, and while the solution in leaking contacting the exposed conductive lines, the conductive lines are electrically connected with each other to send the trigger signal, wherein the detecting device is installed between the tubal body and the protecting tubing. However, in the present application, the two conductive lines of the sensor are fixed on the anti-leak dish. Obviously, to install the two conductive lines of the sensor on the anti-leak dish of the present application is much easier than to install the two conductive lines of the

detecting device between the tubal body and the protecting tubing of the AAPA. Moreover, Stahl et al. and the AAPA do not disclose the technique of installing a sensor comprised of two conductive lines on the tray.

Since neither Stahl et al. nor AAPA discloses the technique features of installing a sensor comprised of two conductive lines on the tray and the installation of the apparatus in amended claim 11 of the present application, it is obvious that the technology features of the present application are non-obvious, and amended claim 11 is allowable.

Since independent claim 11 is allowable, dependent claims 16-17 each of which depends from independent claim 11 are likewise believed to be allowable. Accordingly, the applicants respectfully request that the section 103(a) rejections be withdrawn.

(3) With regard to claim 12, since independent claim 11 is allowable, dependent claim 12 that depends from independent claim 11 is likewise believed to be allowable. Accordingly, the applicants respectfully request that the section 103(a) rejections be withdrawn.

(4) Applicants have cancelled claims 15 and 18-19 of the present application.

(5) Since independent claim 11 is allowable, dependent claims 16-17 each of which depends from independent claim 11 are likewise believed to be allowable. Accordingly, the applicants respectfully request that the section 103(a) rejections be withdrawn.

Conclusion

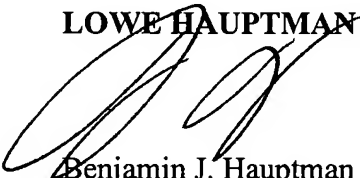
In light of the above remarks, Applicants respectfully submit that Claims 1, 2, 4-12, 16 and 17 as currently presented are in condition for allowance and hereby requests reconsideration. Applicants respectfully request the Examiner to pass the case to issue at the earliest convenience.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including

extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

LOWE HAUPTMAN & BERNER, LLP



Benjamin J. Hauptman
Registration No. 29,310

Customer Number: 22429
1700 Diagonal Road, Suite 300
Alexandria, Virginia 22314
(703) 684-1111
(703) 518-5499 Facsimile
Date: September 29, 2005
BJH/jk